

Claims:

1. An apparatus comprising:
a first output port configured to output a first reference test signal;
a first input port configured to input a second reference test signal; and
a second output port configured to output a first stressed test signal, wherein the second reference test signal is based on the first reference test signal and the first stressed test signal is based on the second reference test signal.
2. The apparatus of claim 1, wherein at least one of the first reference test signal, the second reference test signal, and the first stressed test signal is an optical signal.
3. The apparatus of claim 1, wherein at least one of the first output port, the first input port, and the second output port is a fiber optic port.
4. The apparatus of claim 1, wherein the first reference test signal is modulated at an external transmitter to output the second reference test signal from the external transmitter.
5. The apparatus of claim 12, wherein:
the first reference test signal and the second reference test signal are modulated at different frequencies; and
the first reference test signal and the second reference test signal carry the same data.
6. The apparatus of claim 1 wherein the first reference test signal and the second reference test signal are modulated at the same wavelength; and
the first reference test signal and the second reference test signal carry substantially the same data.

7. The apparatus of claim 4, comprising an internal transmitter, wherein the first reference test signal is generated at the internal transmitter.

8. The apparatus of claim 1, comprising stressing medium, wherein the second reference test signal is stressed at the stressing medium to output the first stressed test signal from the stressing medium.

9. The apparatus of claim 8, wherein the stressing medium stresses the second reference test signal by at least one of:

- attenuating the second reference test signal;
- creating dispersion in the second reference test signal; and
- creating interference with the second reference test signal.

10. The apparatus of claim 1, wherein the apparatus monitors at least one of the first reference test signal, the second reference test signal, and the first stressed test signal.

11. The apparatus of claim 1, wherein:
the apparatus comprises a first switch, an internal transmitter, and a stressing medium:

- the internal transmitter is coupled to the first output port through the first switch, when the first switch is in a first switching state; and

- the internal transmitter is coupled to the stressing medium through the first switch when the first switch is in a second switching state.

12. The apparatus of claim 11, wherein the first input port is coupled to the stressing medium when the first switch is in the first switching state.

13. The apparatus of claim 1, comprising:

a second input port configured to input a second stressed test signal;
a third output port configured to output a third stressed test signal; and
a third input port configured to input a fourth stressed test signal.

14. The apparatus of claim 13, wherein the third stressed test signal and the fourth stressed test signal are the same.

15. The apparatus of claim 13, wherein the apparatus monitors at least one of the first reference test signal, the second reference test signal, the first stressed test signal, the second stressed test signal, the third stressed test signal, and the fourth stressed test signal.

16. The apparatus of claim 13, wherein the second output port is externally coupled to the second input port.

17. The apparatus of claim 16, wherein the second output port is externally coupled to the second input port by a communication link under test.

18. The apparatus of claim 17, wherein the communication link under test comprises at least one of:

a communication medium; and
a communication device.

19. The apparatus of claim 18, wherein the communication medium is chosen from the group consisting essentially of:

optical media;
wire line media; and
wireless media.

20. The apparatus of claim 18, wherein the communication device is at least one of:

an amplifier;
a repeater;
a coupler; and
a polarizer.

21. The apparatus of claim 13, wherein the third output port is externally coupled to the third input port.

22. The apparatus of claim 21, wherein the third output port is coupled to an external device under test.

23. The apparatus of claim 22, wherein the external device under test is an external receiver.

24. The apparatus of claim 22, wherein the external device under test inputs the third stressed test signal and outputs the fourth stressed test signal.

25. The apparatus of claim 1, wherein the apparatus includes an internal receiver.

26. The apparatus of claim 13, wherein the apparatus comprises an internal receiver.

27. The apparatus of claim 26, wherein the internal receiver inputs the fourth stressed test signal.

28. A method comprising:
outputting a first reference test signal from a first output port of a communication testing device;

inputting a second reference test signal into a first input port of the communication testing device; and

outputting a first stressed test signal from a second output port of the communication testing device.